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C07K 14/47, C07K 16/18,
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A61K 38/17, A61K 31/7088**

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05.02.2001 US 266860 P

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(83) Declaration under Rule 28(4) EPC (expert solution)

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Remarks:

The sequence listing, which is published as annex to the application documents, was filed after the date of filing. The applicant has declared that it does not include matter which goes beyond the content of the application as filed.

(54) Myosin-like gene expressed in human heart and muscle

(57) The invention provides compounds and compositions comprising isolated nucleic acids encoding a novel human myosin-like protein particularly expressed

in heart and muscle, compositions derivable directly or indirectly therefrom, including probes, proteins, and antibodies, and methods for using the same.

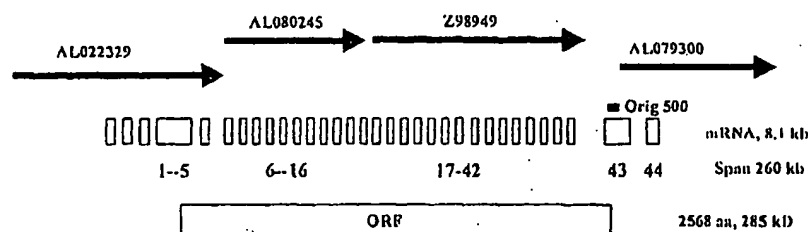


Fig. 5

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PARTIAL EUROPEAN SEARCH REPORT

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which under Rule 45 of the European Patent Convention EP 01 11 2637 shall be considered, for the purposes of subsequent proceedings, as the European search report

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
X	DATABASE EMBL [Online] Entry HS125H2, Acc.no. Z98949, 6 September 1997 (1997-09-06) LLOYD, D.: "Human DNA sequence from clone CTA-125H2 on chromosome 22q11-12 Contains part of the gene for a novel protein similar to KIAA0216 and myosin heavy chain, ESTs, GSSs and a CpG Island." XP002177437 see nt. 1-120630	1-26	C12N15/12 C12N15/62 C07K14/47 C07K16/18 C12Q1/68 G01N33/53 A61K38/17 A61K31/7088
P,X	DATABASE EMBL [Online] Entry/Acc.no. AB042648, 16 May 2001 (2001-05-16) YOKOTA, J ET AL.: "Homo sapiens bk125H2.1 mRNA, complete cds." XP002177438 * the whole document *	1,4-10	
P,X	WO 00 58473 A (CURAGEN CORP ;LEACH MARTIN (US); SHINKETS RICHARD A (US)) 5 October 2000 (2000-10-05) see seq.ID's 3195 and 3196 and paragraphs relating to ORF1598 --- -/--	1,4-21, 23-26	TECHNICAL FIELDS SEARCHED (Int.Cl.7) C12N C07K C12Q G01N A61K
INCOMPLETE SEARCH The Search Division considers that the present application, or one or more of its claims, does/do not comply with the EPC to such an extent that a meaningful search into the state of the art cannot be carried out, or can only be carried out partially, for these claims. Claims searched completely : Claims searched incompletely : Claims not searched : Reason for the limitation of the search: Although claim 12, in as far as it pertains to in vivo use, is directed to a method of treatment of the human/animal body (Article 52(4) EPC), the search has been carried out and based on the alleged effects of the compound/composition.			
Place of search THE HAGUE		Date of completion of the search 13 September 2001	Examiner Smalt, R
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

EPO FORM 1502 03.92 (P04C07)



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Application Number
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DOCUMENTS CONSIDERED TO BE RELEVANT			CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	
P,X	WO 00 77173 A (HUMAN GENOME SCIENCES INC ; ROSEN CRAIG A (US); RUBEN STEVEN M (US)) 21 December 2000 (2000-12-21) see seq.ID's 12, 53 and 117, and gene #2 -----	1,4-21, 23-26	
			TECHNICAL FIELDS SEARCHED (Int.Cl.7)

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**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
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Patent document cited in search report		Publication date		Patent family member(s)	Publication date
WO 0058473	A	05-10-2000	AU	3774500 A	16-10-2000
			WO	0058473 A2	05-10-2000
WO 0077173	A	21-12-2000	AU	5022200 A	05-12-2000
			AU	5174600 A	02-01-2001
			WO	0070076 A1	23-11-2000
			WO	0077173 A1	21-12-2000

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82



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The following terms were not found: hgdmlp, hgdmlp-1.

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[382](#)

[#7](#) Search #6 AND #2

12:18:26

[1415](#)

[#6](#) Search hgdmlp-1

12:18:10

[5065564](#)

[#5](#) Search #4 AND muscle

12:16:41

[777](#)

[#4](#) Search #2 AND human

12:16:19

[1155](#)

[#2](#) Search "Myosin Heavy Chains"[MeSH]

12:15:44

[3042](#)

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Aug 14 2006 08:07:58

IUBMB Enzyme Nomenclature

EC 3.6.4.1

Common name: myosin ATPase

Reaction: $\text{ATP} + \text{H}_2\text{O} = \text{ADP} + \text{phosphate}$

Other name: actomyosin

Systematic name: ATP phosphohydrolase (actin-translocating)

Comments: Proteins of the contractile apparatus of muscle and nonmuscle cells; myosin molecule consists of two heavy chains (about 200 kDa) and two pairs of light chains (15-27 kDa). The head region of the heavy chain contains actin- and ATP-binding sites. ATP hydrolysis provides energy for actomyosin contraction.

Links to other databases: [BRENDA](#), [EXPASY](#), [KEGG](#), [ERGO](#), CAS registry number:

References:

1. Rayment, I. The structural basis of myosin ATPase activity. *J. Biol. Chem.* 271 (1996) 15850-15853. [Medline UI: [96279116](#)]
2. Hasson, T. and Mooseker, M.S. Vertebrate unconventional myosins. *J. Biol. Chem.* 271 (1996) 16431-16434. [Medline UI: [96279199](#)]
3. Murphy, C.T. and Spudich, J.A. The sequence of the myosin 50-20K loop affects myosin's affinity for actin throughout the actin-myosin ATPase cycle and its maximum ATPase activity. *Biochemistry* 38 (1999) 3785-3792. [Medline UI: [99192418](#)]

[EC 3.6.4.1 created 1984 as EC 3.6.1.32, transferred 2000 to EC 3.6.4.1]

Return to [EC 3.6.4 home page](#)

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- Select [NLM MeSH Browser](#) under the Links menu for additional information.

☐ 1: Myosin Heavy Chains

The larger subunits of MYOSINS. The heavy chains have a molecular weight of about 230 kDa and each heavy chain is usually associated with a dissimilar pair of MYOSIN LIGHT CHAINS.

Year introduced: 1996

Subheadings: This list includes those paired at least once with this heading in MEDLINE and may not reflect current rules for allowable combinations.

☐ administration and dosage ☐ analysis ☐ antagonists and inhibitors
☐ biosynthesis ☐ blood ☐ chemistry ☐ classification ☐ deficiency
☐ diagnostic use ☐ drug effects ☐ genetics ☐ immunology ☐ isolation and purification ☐ metabolism ☐ pharmacology ☐ physiology ☐ radiation effects
☐ ultrastructure

☐ Restrict Search to Major Topic headings only

☐ Do Not Explode this term (i.e., do not include MeSH terms found below this term in the MeSH tree).

Entry Terms:

- Heavy Chains, Myosin
- Myosin Heavy Chain
- Heavy Chain, Myosin

Previous Indexing:

- [Myosin \(1971-1995\)](#)

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Macromolecular Substances

Polymers

Biopolymers

Microfilament Proteins

Myosins

Myosin Heavy Chains

All MeSH Categories

Chemicals and Drugs Category

Amino Acids, Peptides, and Proteins

Proteins

Contractile Proteins

Muscle Proteins

Myosins

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Search Results for 10/723361

(FILE 'HOME' ENTERED AT 15:24:36 ON 31 AUG 2006)

FILE 'REGISTRY' ENTERED AT 15:25:02 ON 31 AUG 2006

E "MYOSIN"/CN 25

E "MYOSIN HEAVY CHAIN"/CN 25

L1 1 S E25

FILE 'MEDLINE, AGRICOLA, CAPLUS, BIOSIS, EMBASE, WPIDS' ENTERED AT 15:25:59 ON 31 AUG 2006

L2 122766 S L1 OR MYOSIN

L3 21945 S L2 AND (HUMAN OR SAPIENS)

FILE 'CAPLUS' ENTERED AT 15:30:06 ON 31 AUG 2006

E GU YIZHONG/AU 25

L4 7 S (E3) AND (MYOSIN)

E JI YONGGANG/AU 25

L5 7 S (E3) AND (MYOSIN)

E PENN S G/AU 25

L6 7 S (E3 OR E7 OR E8 OR E9 OR E10 OR E11) AND (MYOSIN)

E HANZEL D K/AU 25

L7 7 S (E3 OR E7 OR E8 OR E9) AND (MYOSIN)

E RANK D R/AU 25

L8 7 S (E3 OR E5 OR E8 OR E9) AND (MYOSIN)

E CHEN WENSHENG/AU 25

L9 7 S (E3) AND (MYOSIN)

E SHANNON M E/AU 25

L10 7 S (E3 OR E15 OR E18 OR E19) AND (MYOSIN)

L11 7 S L4 OR L5 OR L6 OR L7 OR L8 OR L9 OR L10

FILE 'MEDLINE, AGRICOLA, CAPLUS, BIOSIS, EMBASE, WPIDS' ENTERED AT 15:35:08 ON 31 AUG 2006

L12 10 S HGDMLP-1

L13 42 S MYO18B

L14 52 S L12 OR L13

L15 19 DUP REM L14 (33 DUPLICATES REMOVED)

L16 15 S L15 NOT L11

EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S1	2	"6593304".pn.	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	OFF	2006/08/29 15:44
S2	2	"6024958".pn.	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	OFF	2006/08/29 15:49
S3	0	"199623886.pn"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	OFF	2006/08/29 15:50
S4	0	"9623886.pn"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	OFF	2006/08/29 15:50
S5	2	"9623886"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	OFF	2006/08/29 16:16
S6	6	(gu.in. or ji.in. or penn.in. or hanzel.in. or rank.in. or chen.in. or shannon.in.) and hGDMLP-1	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	OFF	2006/08/31 12:22
S7	157	(gu.in. or ji.in. or penn.in. or hanzel.in. or rank.in. or chen.in. or shannon.in.) and myosin	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	OFF	2006/08/31 12:24